

# SEALS: Semantic Evaluation At Large Scale

Raúl García-Castro, Asunción Gómez-Pérez and the SEALS Consortium

Ontology Engineering Group, Departamento de Inteligencia Artificial.  
Facultad de Informática, Universidad Politécnica de Madrid, Spain  
{[rgarcia](mailto:rgarcia@fi.upm.es),[asun](mailto:asun@fi.upm.es)}@fi.upm.es

Recently, the Semantic Web community has seen an explosion of semantic technologies coming not only from research institutions but also from small and large companies. This explosion raises difficulties for early adopters since, with a move from research to industry, semantic technologies must meet new requirements that may have not been considered before and existing requirements may become stricter.

These difficulties are especially true for the efficiency, scalability and interoperability of semantic technologies in the open and distributed Semantic Web scenario, and make critics and optimistic experts alike still acknowledge the shortcomings of mature research results, including those which have already spanned the bridge into the industrial market.

The SEALS (Semantic Evaluation at Large Scale) European project<sup>1</sup> aims to address two key challenges: the creation of a lasting reference infrastructure for semantic technology evaluation (the SEALS Platform) and the continuous evaluation of semantic technologies at a large scale via public world-wide evaluation campaigns. This project will start in June 2009 and is funded by the Research Infrastructures part of the FP7 Capacities programme<sup>2</sup>.

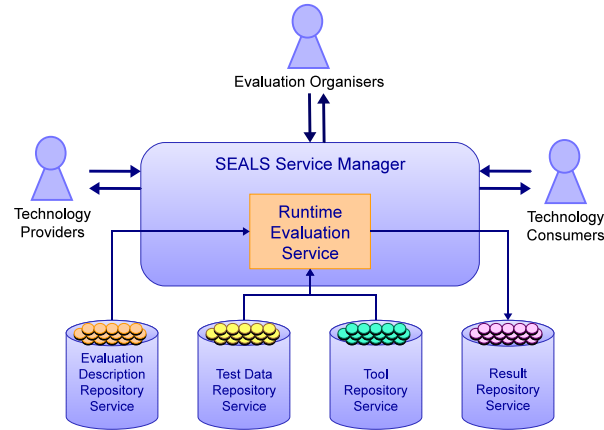
SEALS will work towards the creation of an open and sustainable worldwide community focused on the evaluation and progressive development of semantic technology, which will survive the SEALS project. Our long-term goal is that the SEALS Platform be actively used and managed by the semantic community and, to this end, the SEALS project is calling for requirements from semantic technology researchers, providers and consumers that will feed the project plans. The dissemination and community building activities will establish a foundational network of technology users, providers, and researchers supported by the SEALS Platform. A foundational network is essential to obtaining sustainable research solutions, with promising potential to mature into marketable products.

*The SEALS Platform* will be an independent, open, scalable, extensible and sustainable infrastructure that will allow the remote evaluation of semantic technologies by providing an integrated set of evaluation services and test suites. The SEALS Platform will be used in two public world-wide evaluation campaigns and the results of these evaluation campaigns will be employed in creating semantic technology roadmaps, identifying sets of efficient and compatible tools for developing large-scale semantic applications.

---

<sup>1</sup> <http://www.seals-project.eu/>

<sup>2</sup> <http://cordis.europa.eu/fp7/ict/e-infrastructure/>



**Fig. 1.** The users and components of the SEALS Platform

Figure 1 provides an overview of the users and components of the SEALS Platform. The semantic technology evaluation services will initially be available for five different types of technologies (ontology engineering tools, storage and reasoning systems, matching tools, semantic search tools, and semantic web service tools) and for different evaluation criteria (interoperability, scalability, etc.).

*The SEALS Evaluation Campaigns* will cover the five different types of tools taken into account in the project and will continue existing well-known evaluation campaigns in the Semantic Web area such as the Ontology Alignment Evaluation Initiative<sup>3</sup>, the RDF(S) and OWL Interoperability Benchmarking activities<sup>4</sup>, the Semantic Web Service Challenge<sup>5</sup>, and the PASCAL Challenges<sup>6</sup>.

SEALS will innovate the way in which semantic technology is evaluated. The infrastructure developed within SEALS is, therefore, expected to provide future measuring sticks for both industry and academia when they evaluate their applications/innovations. SEALS is expected to impact at a world-wide level, leading to a faster maturation of semantic technologies, which in turn should lead to an increased rate of adoption of research results by industry.

Moreover, we plan to maintain the infrastructure up and running beyond the end of the project. Indirectly, this is expected to help accelerate innovation in all those fields in which evaluation mechanisms are provided, in the same way as the TREC<sup>7</sup> benchmarks in information retrieval or the TPC<sup>8</sup> benchmarks in database research do.

<sup>3</sup> <http://oaei.ontologymatching.org/>

<sup>4</sup> [http://knowledgeweb.semanticweb.org/benchmarking\\_interoperability/](http://knowledgeweb.semanticweb.org/benchmarking_interoperability/)

<sup>5</sup> <http://sws-challenge.org/>

<sup>6</sup> <http://pascallin.ecs.soton.ac.uk/Challenges/>

<sup>7</sup> <http://trec.nist.gov/>

<sup>8</sup> <http://www.tpc.org/>